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Farm Fire Safety

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FIRE PREVENTION BRANCH
DEPARTMENT OF PUBLIC WORKS CANADA

THE HONOURABLE JEAN-PAUL DESCHATELETS
Minister

TONIGHT and every night throughout the year there will be a crimson glow on the horizon marking the destruction by fire of valuable farm property. Fire can within minutes, destroy possessions which represent a lifetime of labours, joys and sorrows of many generations.

Most of the 5,000 farm fires reported in Canada each year and destroying over nine million dollars of farm property can be prevented.

If you follow the common sense suggestions outlined in this booklet, they will help you make your home and farmyard safe from fire.

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IF FIRE BREAKS OUT ON YOUR FARM—

- ▶ **S**HOUT “FIRE” to arouse persons nearby.
 - ▶ **O**UT YOU GO—Save lives by getting everyone including livestock out of the building involved.
 - ▶ **S**UMMON THE FIRE DEPARTMENT by telephone only after all are out, and from a safe location.
- ▶ **FIGHT THE FIRE** to save property from outside the buildings if it's at all dangerous inside. Move machinery out of all buildings that may become involved.



PLAN IN ADVANCE

- Have your plan of escape from fire worked out in advance. Everyone should know the plan, and the reasons for each part of it.
- Alternate escape routes are a “must” because one or more of the ways out may be blocked off by fire.
- Escaping from one-storey buildings is relatively simple—there are alternative routes through any of the windows to the outside. But remember, storm and screen windows may be difficult to get through. Make sure there is something such as a chair available to smash them out.



- Two - storey buildings require more planning because the stairway may be blocked off by fire, smoke or hot gases. Be prepared to use upper windows, perhaps to the roof of an adjacent building by having ladders strategically located, or by means of a rope with knots at every 2 feet anchored to the inside of a window.
- Remember, in the event of a fire during sleeping hours, a closed bedroom door may save your life.
- If conditions permit, gather everyone together into one room before attempting to escape. Children are easily lost in the confusion.
- When escaping NEVER open the window before the door is closed behind you. This cuts down the draft which would help to spread the fire into your area of escape.
- Fire drills should be carried out often enough so that everyone's role becomes automatic.
- Methods of evacuating children and sick or aged persons should be specially studied.
- Everyone, including children, should know how to telephone the Fire Department and the number to call.
- If in doubt, have your local fire chief check over your escape plan with you.

IN CASE OF FIRE

▶ **S**HOUT "FIRE" to arouse persons nearby if you see fire, or smell smoke or gas. If you believe the fire to be in a room, a cupboard or in a basement section, keep the doors closed. Quickly shut any doors and windows that will help confine the fire, cut down the draft and prevent spread of deadly gases. This will give everyone more time to escape.

▶ **O**UT YOU GO—Save lives by getting everyone including livestock out of building involved as quickly as possible.

- Don't wait to dress yourself or children—wrap them in blankets.
- If you have to go upstairs or away from exits to rescue children and you are unable to return to the ground floor or if you are otherwise trapped, get to a room with a window, quickly shut the door between you and the fire, and shout for help. Don't jump from upper storey windows except as a last resort—wait for help.
- Remember, the air is usually better near the floor in a smoke-filled building.

▶ **S**UMMON THE FIRE DEPARTMENT by telephone only after all are out. Advise them of your fire code number if you have one.

- Never go back into a burning building. It can be totally involved in flame in seconds.
- Try to hold the fire in check with equipment at hand while the fire department is responding. Fight the fire only if you are not endangered.
- Don't waste time or your life.
- See that water is available to supplement the water carried on the fire trucks.
- Call the neighbours to help at the fire, but keep open access roads leading to the fire by proper attention to traffic congestion.

• Give some thought NOW to the chances of being involved in such a crisis and make plans on how escape can be made from any one of the buildings.

- In your house, make sure you can open windows easily, especially in freezing weather, or have something available such as a chair or other heavy object to smash them out.
- Move any equipment and machinery that may be involved in the spread of fire to a safe location. Take no chances as it can be moved back later.
- Have fire drills and make them an affair for all.

BE SURE EVERYONE KNOWS WHAT TO DO



PREVENT FIRES ON YOUR FARM



BUILDING LAYOUT AND CONSTRUCTION

Certain faults of farm building layout and construction are either fire hazards themselves or will increase the spread of fire. In new construction, these hazards can be avoided by correct design, but in existing buildings, they should be found and eliminated as far as is practicable.

LAYOUT

Two common faults of farm building layout are: buildings located too close together and located in line with the prevailing winds in the area. The first fault allows fire to spread from one building to another even in calm weather; the second increases the risk of fire spread even in windy weather.

To reduce these risks, locate new buildings at least 100 ft. apart and avoid locating them in line with the prevailing winds in your area. If this cannot be done, take extra care that non-combustible construction or building materials are used whenever possible.

In one well recommended layout, the buildings are arranged around a court or open area. They can be well spaced out yet give easy access to each of the buildings or service areas. Make sure that easy road access is available to your pond which may be required for fire fighting operations.

ROOFING

Use only metal, composition, asphalt shingle or other fire retardant roof coverings. They retard the ignition of roofs from the burning embers thrown into the air from fires in nearby buildings.

Check roofs of all buildings frequently. Repair or replace those in poor condition.

FIRE CONTAINING CONSTRUCTION

If hay is to be stored above the livestock area in barns make sure the floor is solid so that if the hay catches fire, the floor will not burn through before the stock can be removed.

Consider the installation of self-closing doors on hay chutes and stairways in barns. If fire occurs, these doors will help prevent the spread of fire between floors and lessen the risk of burning hay dropping into the livestock area.

CHIMNEYS

We all know that a chimney carries smoke out of a building. But we must remember that it also carries heat—and sometimes flame. Therefore, if it is not properly built and maintained you are exposed to serious danger by fire.

Why Risk a Building?

Masonry Chimneys:

- should be built of solid masonry units or reinforced concrete not less than 4 inches thick, and lined with approved fire-clay flue liners.
- should be built from the ground up. If built on brackets fastened to the wall part way up they are unstable and susceptible to cracking.
- Combustible construction such as wooden walls should not come in contact with the chimney.
- A cleanout opening should be provided at the base secured with a tight-fitting metal door.
- Chimneys should be inspected every year and repairs made when required. A crack or a loose brick could let flames into your sleeping area.

Factory-Built Chimneys are a recent development and are approved for use by most authorities. They come

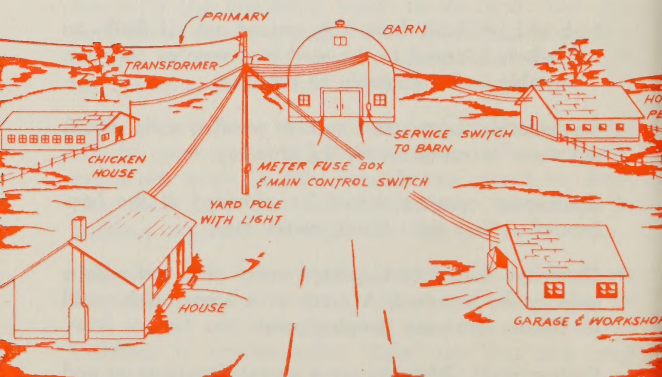
from the factory in sections which can be assembled, eliminating the need for construction on the job.

Check on installation requirements with your provincial or local authority. Use only those which have been approved by a nationally recognized laboratory such as the Underwriters' Laboratories and install it in accordance with the conditions of the listing.

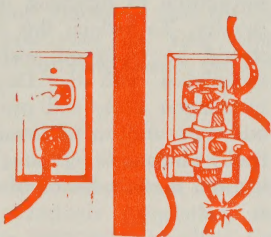
Gas Vents are factory-built flues intended for venting certain gas-fired appliances where the temperature of the flue gases is relatively low. They should not be used for coal, wood or oil-fired appliances which produce higher flue gas temperatures.

ELECTRICAL INSTALLATIONS

- Install all wiring and equipment in accordance with the Canadian Electrical Code and those of provincial and municipal authorities.
- Have all wiring done by a licensed electrician. Use permanently installed wiring whenever possible. This is particularly important to the life and safety of persons and livestock when electrical equipment is required in damp places or near flammable materials.
- Use only Canadian Standards Association labelled electrical equipment and make sure that the equipment is used for the purpose intended.
- The heart of a good farm electrical system is a centrally located pole with fuse box and switch to enable quick control of the system in case of fire. Make sure that the well pump motor is on a separate circuit so that in case of fire, it can continue to operate when everything else is turned off.

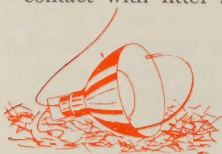


- Fuses are for your protection. Use only those of the proper amperage. Do not "bridge" across a burned-out fuse. It is a warning of trouble. Replace it.
- Avoid "Octopus" wall outlet fittings which allow five to six extension cords in a single socket designed for one or two.
- Large electric motors or equipment drawing heavy current should be installed on separate circuits.
- Electric light bulbs in the barn should be protected by glass and metal guards to prevent hay and dust from coming in contact with them. Light bulbs in reach of animals should be protected by metal guards to prevent breakage.
- Use only portable electric lights equipped with heavy duty cords and protected by suitable guards. Unguarded lamps are easily broken or damaged by mechanical injury and water breaks hot clear glass bulbs.



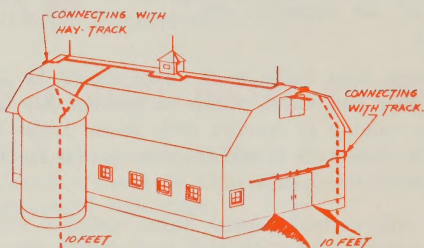
- Although most of the well known makes of brooders carry the Canadian Standards Association label, unsafe electric wiring or makeshift heat lamp units still lead to costly fire losses and injuries to poultry and livestock. Frequently heat lamps are thoughtlessly screwed into any socket or extension cord available. One of the essentials for the safe and efficient use of infra-red heat lamps is an ample supply of power. Buildings for infra-red brooding must have an approved electric service entrance, including ground and entrance cabinet to assure adequate capacity for the anticipated load. The hazards of high temperature (230°F) at the base of heat lamps is not generally appreciated and unless heavy porcelain sockets and electrical insulation materials with high heat resistance are used, the insulation will quickly deteriorate and become a serious fire hazard.

- Fires have been frequently started when connected heat lamps accidentally drop or even come into close contact with litter straw or other combustible materials. With the properly designed guard, hot lamps are kept a safe distance from litter and the hot rays directed upwards even if the unit happens to fall.



LIGHTNING PROTECTION

Because of their exposed locations, farm buildings are susceptible to lightning damage in most parts of the country. To reduce this hazard, every major building should be equipped with lightning rods installed in accordance with the Canadian Standards Association Installation Code and provincial regulations. All metal buildings and metal-framed buildings, although practically immune to lightning damage, still require grounding and the installation of terminal rods.



The chief parts of a lightning rod protection system are: air terminals, conductors, and good ground connections.

- Make regular periodic inspections of the system.
- Check for breaks and corrosion especially where the conductors join the ground connections.
- Replace weak or broken parts promptly as each part is vital to the whole system.
- During a prolonged dry spell, water the ground pole areas regularly.

Lightning also accounts for heavy livestock losses by lightning strokes to trees under which livestock huddle, lightning strokes to wire fences or accumulated static charges on wire fences. If wire fences are grounded and its electrical continuity broken, the greatest possible safety to livestock will be provided.



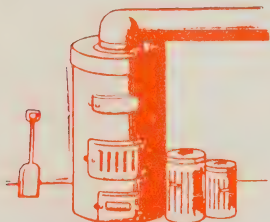
Wire fencing on wood posts or other non-conducting material should be grounded at intervals of 150 ft. in normally dry ground or 300 ft. in damp ground. Grounding can be made by driving a pipe of $\frac{1}{2}$ -inch diameter or larger to which the fence wires are attached into the ground at least 3 feet. In addition to grounding the fence wire, 2 ft., 2 by 4 wood spacers should be inserted in the wires at 100-foot intervals to break its electrical continuity.

HEATING EQUIPMENT

Most of us have a friendly affection for the stove we can warm our hands over or the furnace that keeps us warm in freezing weather. But remember, that friendly stove or furnace can also take your life. Your safety depends on heating equipment correctly chosen, properly installed and well maintained.

Play It Safe

- Nationally recognized testing laboratories, such as those of the Canadian Standards Association, the Underwriters' Laboratories and the Canadian Gas Association test and label most oil and gas-fired heating equipment to accepted safety specifications. Look for their label on equipment—it is your guarantee it has gone through rigid safety tests.



- Check for defects. Heating systems require cleaning and inspection by a competent technician at least once a year, preferably at the beginning of the heating season. This is to ensure that the equipment and controls are clean and functioning correctly. A small investment in having your unit checked protects your family and your farm.



- Provide adequate clearances of equipment from combustible materials. These vary with different types of heating and cooking equipment. Modern

kitchen ranges, for example, have an insulated outer covering, and can be placed near the combustible wood of a kitchen counter. But the wood stove gets almost as hot on the outside as it does on the inside.

- Ventilate the heating area. An adequate air supply is necessary for the safe operation of all heating equipment.
- Look for stability when buying portable appliances. Buy one which cannot easily be tipped over if bumped into.
- Consider escape routes when locating heating appliances. Keep them out of normal escape routes to doorways which might permit safe exit for you and your family in case of fire.



- Clothing, curtains and other combustible materials should be kept well away from heating devices.
- When lighting wood and coal stoves use paper and kindling—**NEVER FLAMMABLE LIQUIDS**. Many Canadians die every year by the use of kerosene or gasoline for this purpose.

OIL SPACE HEATERS

(including portable heaters and cookers)

- Purchase clean, first quality fuel oil. Dirty oil and oil contaminated with gasoline is dangerous.
- Fill oil tanks with care. Use a funnel and safe metal container with pour-spout to reduce the chance of spills. Turn the heater off and allow it to cool before filling so that any spilled fuel will not ignite. If the oil is cold, leave space in the tank for it to expand when it reaches room temperature.
- Check your operating instructions. Never turn oil "ON" and leave stove unattended before being sure the burner is ignited and adjusted for steady operation.
- Keep the heater level and clean.



GAS APPLIANCES

If you have any reason to suspect gas leakage: Open the windows immediately. Gas mixed with air in the right proportions can form a mixture so dangerous that the flicking of a light switch or dialing of a telephone can set off a powerful explosion.

- Do not use an open flame or operate the light switch.
- Check to see if any burner valves are open or pilots extinguished. If so, shut them off.
- If you cannot locate the trouble, get everyone out of the building. **LEAVE THE WINDOWS OPEN AND CALL YOUR LOCAL UTILITY OR GAS COMPANY—from a safe area!**

Keep curtains, towels, paper and other combustible items away from burner surfaces. It is not a toy for children to play with.

When you work with gas always **THINK** very carefully before you **ACT**.

INCINERATORS

The most satisfactory incinerator is built like a wood-burning stove. Spark arresters are essential. Incinerators resembling an ordinary wire basket are almost as hazardous as an open fire.

Incinerators should be located so that sparks will not endanger other buildings, fences, grass or woodland. Regardless of where located, they should never be used when there is a strong wind or left unattended.

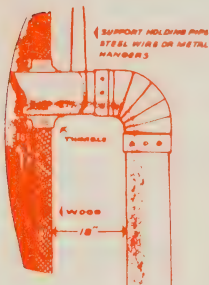
They must not be connected to vents designed for venting gas equipment only.

OTHER HEAT-PRODUCING DEVICES



Toasters, electric irons, griddles, percolators and other similar appliances are also heat-producing devices which must be handled with care. If you use them on wooden tables or under wooden cabinets, feel the wood after they have been in operation a short time. If the wood is too warm to touch it should be covered with non-combustible material such as a metal asbestos sheet or the appliance should be used elsewhere.

SMOKE AND STOVE PIPES



- Maintain a clearance of at least 18 inches between the smoke pipe and combustible material such as wooden construction.
- Take smoke pipes down and clean them at least once a year, preferably in the Spring when the heating season is over. If the stove or furnace is used the the year around, they should be cleaned twice a year.
- Acid from the soot causes rust which eats holes in smoke pipes. If you don't keep it in good repair, you are certain to have a fire.
- Make sure that all joints and seams are securely fastened and substantially smoke tight.
- Your smoke pipe should be as short as possible, supported by steel wire, or metal hangers, and run directly to the chimney.
- Pipes should be fastened to the chimney to ensure that they will not pull out or be pushed in so far as to reduce the draft.
- If in doubt about any safety problem concerning your heating equipment, consult your local FIRE CHIEF.

FLAMMABLE LIQUIDS

Would you permit a few sticks of dynamite to lie around your buildings? Ridiculous? Many of us, by the careless use and storage of flammable liquids, expose ourselves to a similar situation.

Flammable liquids are very dangerous, but with a little knowledge of their proper care and handling, the danger can be controlled. Know the names of the most common flammable liquids: gasoline, naphtha, kerosene (coal oil), paint thinners, turpentine, varsol, etc.

STORAGE

The increasing use of gasoline and diesel-powered machinery and vehicles entails problems in the bulk storage and handling of flammable liquids.

Underground Storage

For large supplies of petroleum fuels—other than liquefied petroleum gas—an underground tank with a pump is the safest storage method.

- Make sure that the equipment and tank are of an approved design and installed in accordance with provincial or local regulations. Your gasoline supplier will advise you on these.
- See that the tank is given an adequate rust preventive coating as leaks underground may contaminate water supplies, etc., before being detected.



Aboveground Storage

- Locate aboveground tanks as far as possible from buildings—50 feet minimum.
- Vent tanks to prevent a dangerous build-up of pressure.
- To avoid evaporating the contents, the vent caps should be of a type approved by the Underwriters' Laboratories designed to relieve pressures of about 3 pounds per square inch.
- Mount tanks with top openings only on masonry blocks approximately 6 inches high to protect the bottom from corroding. They should be equipped with a tightly and permanently attached pumping device with a hose long enough to permit filling vehicles, equipment or containers. Equip either the pump or the hose with padlocks to prevent tampering.



- Mount tanks elevated for gravity discharge on non-combustible supports of adequate strength and design to provide stability. Discharge openings may be either in the bottom or at the end. They must be provided with shut-off valves that can be closed in case of fire. Tank outlets should be provided with hoses equipped with self-closing valves that will close automatically when the hand pressure is released and of a type that can be padlocked to prevent tampering.
- Aboveground gasoline tanks should be electrically grounded both for protection against lightning and static electrical charges.

Storage of Small Quantities

- Store small quantities of flammable liquids in metal drums located at least 50 feet away from important buildings.
- Stencil the name of the fuel on the container to avoid the possibility of a serious mistake.
- Hand pumps provide the safest method for removing flammable liquids from drums, but in cases where they are not available, spigot-type valves may be used if of heavy construction and liquid tight. They should be of a type that can be padlocked to prevent tampering by children. Drums must not be interconnected.
- Flammable liquids used indoors must be kept in a safety can. They have a spring-closed cover to prevent escape of flammable vapours. The can should not exceed one-gallon capacity.
- Never keep flammable liquids in other than capped metal containers. Glass containers are easily broken and plastic containers melt at relatively low temperatures.

POURING GASOLINE



- Never pour gasoline near an open flame, operating engine or motor or other possible source of ignition. Gasoline vapours creep along the ground and form an explosive mixture with air which can be readily ignited. A static electrical spark capable of causing an explosion can even be produced by pouring gasoline from one container to another. Always maintain metallic contact between containers to prevent sparking. If you are refuelling a vehicle at a gasoline pump, keep the metal nozzle of the pump hose in contact with the mouth of the gasoline tank. If you use a funnel in pouring gasoline from one container to another, make sure the funnel is of metal and keep both containers in contact with the funnel.
- Never refuel tractors while the motor is running or is extremely hot.
- Check fuel lines frequently for leaking connections.
- Avoid overfilling—leave room for the fuel to expand as it warms.
- Be careful of spills—allow spilled fuel to dry before starting the engine.

GASOLINE AND DIESEL ENGINES

- Do not house or operate automobiles, trucks, tractors or stationary engines in barns or granaries. These buildings usually contain highly combustible materials and dusts. The backfire of an engine when it is started could cause a fire. Similarly, a fire could be started by an overheated or faulty muffler, hot or burning carbon deposits, or faulty ignition.

DRYCLEANING

- NEVER do drycleaning at home. Too many lives have been lost by the use of highly flammable liquids such as gasoline, benzene or naphtha. During cleaning operations, they give off explosive vapours which could be ignited by the smallest spark. Safe drycleaning solvents are difficult to obtain in the small quantities required for home cleaning purposes.

CLEANING MACHINERY

- Never use gasoline to clean grease and dirt from machine parts and bearings. The explosive vapours produced could be ignited by an open flame, a lighted cigarette, a static electrical spark or even a mechanical spark caused by striking two pieces of metal together.
- Use "safe" petroleum solvents recommended by your oil company.

INSECTICIDES AND FUMIGANTS

- Many insecticides and fumigants are highly flammable. Do not spray them in the presence of open flames, lighted cigarettes or other sources of ignition. Before you start spraying, turn off pilot lights and disconnect any electrical equipment that might cause sparks.
- Keep the fluid containers closed and away from heat.

BLOWTORCHES

- Always fill gasoline blowtorches outdoors.
- Do not overfill the priming cup when starting the torch as gasoline may flow over the tank, become ignited and produce sufficient heat to develop dangerous pressure in the tank.
- If gasoline flows over the tank, wipe it off thoroughly before you light the torch and dispose of the rag safely.
- Never leave a burning blowtorch unattended.
- If a torch leaks or misfires, remove it from the building immediately.

KEROSENE LANTERNS, LAMPS, INCUBATORS AND BROODERS

- Never fill the reservoirs while the burner is lit or when there is an open flame or other possible source of ignition nearby.



- Keep wicks and burners clean. Boil burners in soda or lye to clean them.
- Replace all wicks that do not entirely fill the wick-tube section of the burner. Too narrow a wick will permit contact between the flame and the vapour above the oil in the reservoir and could result in an explosion.

PAINTS AND LACQUERS

Some quick-drying paints and lacquers give off flammable vapours while they are being applied and while they are drying.

To be safe, use them only in well-ventilated areas. Keep open flames, lighted cigarettes, and other possible sources of ignition away from the working area.

In cold weather, paint may have to be heated before it can be used. Never heat it by setting the can on top of a stove. Set the can in a pail of hot water and keep the lid partly open.

PAINT RAGS

Most paints contain “drying” oils such as linseed oil which heat spontaneously when soaked up in rags or cotton waste. If these are left around, a fire could occur. Either burn them in a safe location outdoors or store them in a covered metal container until they can be safely disposed of.

PAINT REMOVERS

Most paint removers give off highly flammable vapours. Use them only in a well-ventilated room and away from open flames, lighted cigarettes and other sources of ignition.

LIQUEFIED PETROLEUM GAS

Liquefied petroleum (L.P.) gas includes propane, butane and mixtures of the two. It is commonly referred to as L.P. gas, or bottled gas, but is also known by various trade names. It is widely used for cooking, heating and as a tractor fuel.

L.P. gas is supplied to consumers in specially-designed cylinders approved by the Board of Transport Commissioners or by tank truck to a bulk storage tank on the consumer's premises.

It is handled and stored as a liquid under pressure but it is used as a gas. In the gaseous state it is as dangerous as any other manufactured gas or flammable liquid and has the hazardous property of being heavier than air. Thus if there is any leak in the system, the gas will accumulate in low areas. Good ventilation is, therefore, vital.

All equipment—appliances, piping, cylinders or tanks must be installed by trained personnel in accordance with the Canadian Gas Code and provincial or local regulations.

L.P. gas, as manufactured, has no smell, but an odourant is added so that leaks can be detected. Familiarize yourself with this odour. If you suspect a leak, immediately close the main fuel supply valve and call your dealer to make the necessary repairs. Never use a flame to check for a suspected leak.

SMOKERS' CARELESSNESS

Careless smoking is the chief cause of home fires and one of the chief causes of barn fires. Barns are perhaps one of the quickest to burn of all buildings as they are usually of wood frame construction, large in area, and filled with extremely combustible hay or straw. The matter of smoking in or near barns is not to be taken lightly. Post "NO SMOKING" signs in your barn and enforce the requirement.



In buildings where smoking is permitted, provide approved type ash trays that are made of non-combustible material and are so designed that a cigarette if left burning will fall into the tray. Never empty ash trays with smouldering remains into piles of waste.

Keep all lighters and matches where children cannot reach them.

Never smoke in bed.

SPONTANEOUS IGNITION OF HAY AND WET GRAINS

Hay may heat and catch fire by itself if it is not well dried before storing. Alfalfa, clover and soybean hays with heavy stems which hold moisture after the leaves appear to have dried are most likely to heat and cause a fire.

See that the crop is dry and properly cured before storing and protect it against wetting by repairing leaky roofs and openings through which rain and snow can wet crops after storage.

Spread the crop evenly in the mow so that it is uniformly packed. This is to prevent loose areas through which air may infiltrate to tight-packed areas subject to heating. Provide for ventilation immediately after storage.

After storage, crops should be inspected daily for several weeks. Look for signs of steaming, irritating odours, wet areas and “flues” in the hay.

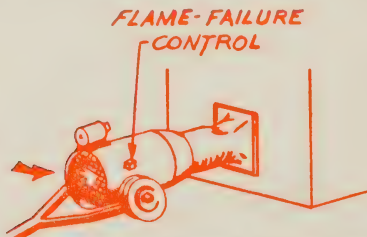
Hay that is suspect should be moved as soon as possible to an open field. Avoid digging into it if possible as it could ignite immediately if it is exposed to the air. Have fire fighting equipment at the ready whilst you are removing the hay.

Wet grains behave in a similar manner. Make sure they are below the safe moisture content before storage. See that the storage area is well ventilated.

GRAIN DRYERS

The use of improper or unapproved equipment for the artificial drying of grains has caused many disastrous fires.

- Make sure all dryers have some form of thermostatic control design to shut off the blower or dampers when the temperature in the heat transfer chamber gets too high.
- Protect the electric motor drive by an over-current device and a thermal overload switch.



- In all cases, arrange the heated air crop dryer so that the heated air is fed to the outside.
- It should never be used in a main granary or in a main storage building.

LIME

Never store quicklime or burnt lime in buildings or allow it to come in contact with hay or straw as it can easily create sufficient heat to start a fire.

FERTILIZERS

- Store bags in a clean, dry area segregated from other combustible materials.
- Do not allow emptied bags to accumulate, but burn them safely out of doors. If plastic bags are to be used, wash them out well with water before storing.

RUBBISH AND TRASH

Everyone collects rubbish and trash, partly due to the difficulty in deciding what to keep and what to throw away. From the standpoint of fire prevention, we should dispose of as much unused material as we can and store that which we keep, safely.

If you must burn rubbish, do it safely. Follow these precautions:

- Use a rake to remove combustible material from a 3-foot strip around the rubbish or trash to be burned.
- Have a pail of water handy.
- Avoid burning when the wind is high.
- Stay with the fire until it is out.

BROKEN GLASS

Fires have been reported in crop fields caused by the heat of the sun's rays concentrated through broken glass. Make sure that all broken glass is cleared from fields.

FIELD BURNING

This practice, although followed by some farmers, is not recommended under any circumstances. Apart from the serious fire hazard created, the fire destroys valuable humus.

Since many still carry out this dangerous practice despite the warnings, the following precautions should be taken.

- Plough a firebreak at least 15 feet wide around the field to be burned.
- Set the fire to burn against, not with, the wind.
- Do not burn when there are high winds.

FARM WOODLANDS

- If you have farm woodlands, post fire warning notices around them.
- Maintain firebreaks between farm woodlands and brushland or pastures.
- Cut firebreaks through the woods themselves to provide access for firefighting.
- Remove dead trees and branches regularly.

FIGHTING FIRES ON YOUR FARM



Despite the best fire prevention measures, nearly every farm has had a fire at one time or another. Even a grass fire can be disastrous under the right conditions when buildings lie in its path. Your chances of escaping a serious loss will be greatly improved if you have made preparation for fighting a fire in advance.

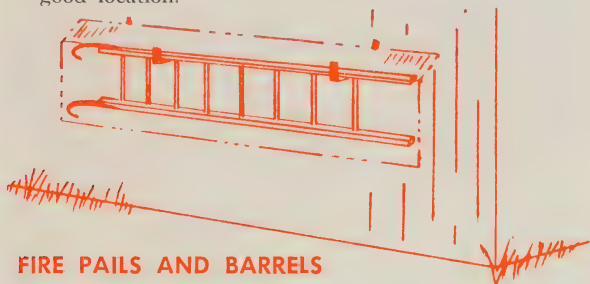
- Get suitable equipment: easy to operate and maintain, dependable in all weather.
- Keep it handy for use.
- Practice using it.
- Keep it in condition for use.

Firefighting equipment must be able to reach the fire and put it out. Consider what may be involved in the fire: wood frame buildings, flammable liquids, electrical equipment, farm vehicles, farm woodlands, etc. Rakes, shovels, axes, brooms, picks are all useful tools and a bucket of dirt is quite effective against many fires.



LADDERS

- Have a portable ladder long enough to reach the roof area of the highest building on the farm.
- Two light, strong, one-piece, portable ladders are also useful for fire fighting. One of them should have a hook attached to one end for catching on the roof edge.
- Hang ladders on the side of a building where they cannot be covered over by grass and snow. Protect them from exposure to the weather. The side of the machine or tool shed at a height of 3-5 ft. would be a good location.



FIRE PAILS AND BARRELS

- Have a 2-gallon pail for every 400-500 sq. ft. of building area.
- Hang them from hooks or brackets or set them on pail racks, 2-3 ft. off the floor.



- Store water in 40- or 45-gallon barrels or drums with snug but easily removable covers.
- Place them where they will be easily accessible for filling pails when fighting a fire.
- Paint them red for easy identification.
- To prevent the water from freezing, put calcium chloride in the water as shown in the table, but remember that calcium chloride is corrosive.

lbs. per gallon	freezing point
2 lbs.	+13° F.
3 lbs.	—2° F.
4 lbs.	—22° F.
5 lbs.	—53° F.

Cover pails to prevent evaporation

WATER UNDER PRESSURE

Water under pressure—such as that usually available from the farm water system or from separate power driven irrigation or “ditch” pumps—is valuable for fire fighting if the pressure and quantity of water available are sufficient for the job. Small systems are usually helpful in filling pails and certain types of fire extinguishers, but do not rely on them to give enough water to put out a fire that has made some headway.



A garden hose connected to your water supply can be used for an extended period of time and is especially useful on small fires and fires which might not be controlled by hand fire extinguishers. Have hose outlets distributed where the hose can always be hooked up—and keep the hose handy.

Lack of water is the most serious danger when fire strikes. A water supply of 2,500 gallons from a tank, farm pond, or stream should be available. Many provincial departments of agriculture have specifications for the construction of ponds—obtain their assistance where it is available.

Choose a pump with a minimum capacity of 50 Imperial gallons per minute or 3,000 gallons per hour at a pressure of 60 pounds per square inch. This will deliver a satisfactory spray through a spray-solid stream combination nozzle. When the fire department arrive, the portable pump can also be used to help maintain the water supply in the tank of the fire truck.

FRUIT SPRAYERS

High pressure fruit sprayers will also supply water under pressure for fighting fires. A nozzle that can be adjusted for a long range straight stream or spray and some extra lengths of hose are needed to adapt the equipment for fire fighting. Do not use too much hose as this can result in ineffective pressure. Since sprayers seldom carry more than 300 gallons of water, plan to refill them quickly. Check with the supplier of your sprayers on their use for fire fighting.

FIRE EXTINGUISHERS

- For the home, a 2-gallon (2½ U.S. gallon) water pump tank will be suitable for fighting fires in most parts of the home. They are relatively inexpensive to buy and repair, use plain water, are simple to operate and have few moving parts to get out of order. They have an effective range of 30 ft., are economical in their use of water and can be carried long distances if necessary.

In the kitchen a 4- or 5-lb. dry chemical extinguisher should also be located near the door to be available to fight fires involving fats or greases.



An "all-purpose" dry chemical extinguisher is available on the market and although it has a relatively high initial cost, a 20-lb. or equivalent size can be substituted in place of both the pump tank and the small dry chemical extinguisher.

- For the barn, a 4-gallon (5 U.S. gallon) back-pack water pump tank or the standard 2-gallon (2½ U.S. gallon) pump tank are most suitable for fires in hay, straw or paper.



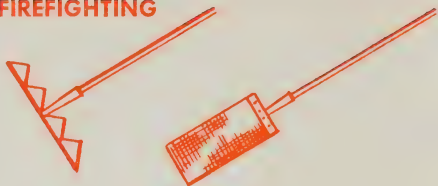
- For the tool shed, tractor, shed, or storage house, where flammable liquids may be stored or handled, a 20-lb. or equivalent size "all purpose" dry chemical extinguisher should be installed.
- For the tractor or power equipment, a 4- or 5-lb. dry chemical extinguisher (minimum size) should be carried so that apart from fires involving the equipment, it will be handy to fight fires no matter where the equipment may be.

Dry chemical extinguishers are suitable for putting out flammable liquid and electrical equipment fires. The chemical used will not damage compressors, dryers, grinders, pumps, motors or fence controls. "All purpose" dry chemical extinguishers in addition to their effectiveness in fighting flammable liquid and electrical fires are also suitable for wood, paper, cloth, rubbish, grass and brush fires. The powder in all these dry chemical extinguishers is not affected by heat, cold or moisture when it is in the extinguisher. The powder can be propelled by either a gas cartridge or air pressure, but the cartridge type is recommended for farm application.

Whatever type of extinguisher is bought, make sure it bears the label of the Underwriters' Laboratories of Canada, Underwriters' Laboratories Inc., or the Factory Mutuals Laboratories.

Remember if you are caught without the proper equipment, a bucket or shovel full of dirt will be effective against many small fires.

BRUSH FIREFIGHTING



Two effective tools for fighting brush fires are the fire rake and the fire beater:

- The fire rake can be made by attaching a 6-foot wooden handle to a piece of strap iron that has a four or five mower-sickle sections riveted to it in the form of a rake.
- The fire beater can be made by attaching a 2-foot piece of 12-inch belting to a long handle.
- Remember these tools must be able to take hard usage and should be well made.
- For fighting fires in farm woodlands, axes are essential and back-pack water pumps helpful. In actual forest areas, or where large trees may be encountered, power saws are useful for cutting down dangerous snags or opening up firebreaks.

ALARM SYSTEMS

The installation of a fire detecting alarm system assists in early detection of a fire before it can make much headway and so you get relatively greater protection from your fire fighting equipment. Systems are available for both home and outbuilding use but for an effective one the cost is relatively high. A makeshift system will only give you a false sense of security. Make sure that only equipment, approved by the Underwriters' Laboratories Inc. or the Factory Mutuals Laboratories is used. Your provincial Fire Marshal or Commissioner will be pleased to advise you on suitable types.

COMMUNITY PROTECTION

Fires that are large when discovered or burning over a wide area are usually too difficult for one person to control. Even relatively small fires are put out more quickly and thoroughly when trained firefighters are on the job.

If you do not have an organized fire department in your community, get together with your neighbours and contact your provincial Fire Marshal or Commissioner for assistance regarding the equipment and organization.

NEIGHBOURLY AID

While it is traditional for neighbours to help when trouble strikes, one of the greatest difficulties experienced by fire departments in rural fires is the obstruction of routes by cars from the surrounding area. When going to the scene of any fire, make sure you drive and park your car so as to keep the way clear for fire apparatus.

One great assistance to fighting farm fires is extra water. Neighbours can be of great help if they bring water for booster tanks in containers such as milk cans and drums filled from their own supply of water.

THE FARM FIRE SAFETY TEST

Can you answer “yes” to all these questions? Questions which receive a “no” answer indicate potential danger spots which need prompt attention and correction. Inspect your farm yourself—today!

IN CASE OF FIRE

- Is the number of the nearest fire department posted near the phone?
- Have you instructed your family in a plan of action if fire breaks out?
- Have your family been instructed and drilled on locating exits from house and buildings and how to close all windows and doors in case of fire?

CONSTRUCTION

- Are your roofs in good condition?
- Are main buildings located at least 100 feet apart?
- Are self closing doors installed on chutes and stairways in the barn?
- Do you know the location of shut-offs for water, gas and electricity?

ELECTRICAL

- Has wiring been checked by a qualified person since installation?
- When new machinery was added to the load on any motor, was wiring inspected and any necessary new wiring installed by a qualified electrician?
- Is electricity delivered to a centrally located pole and switch box, and distributed from there to the buildings?
- Do you check your fuse box regularly to see that only specified “sizes” are being used?
- Have you removed all extension cords from over hooks, nails or beams, or stretched through doors?
- Do you use moisture proof cords for outside weather conditions?
- Are light fixtures, fuse boxes and switches kept free of dirt, dust and chaff in the barn?
- Are all electrical appliances in good condition; are they being properly operated?
- Are all electric motors kept clean and free from trash accumulation?
- Is your farm water system on a separate electrical circuit?
- Are all heat lamps of an approved design?
- Are light bulbs in the barn and other dusty areas protected with glass or metal guards from damage by animals, human carelessness or to keep from setting fire to hay, straw or dust?

LIGHTNING PROTECTION

- Have lightning protection systems of an approved type been installed on important buildings on your farm?
- Have the lightning rod installations been checked and put into good condition within the past year?
- Are lightning rod systems grounded in moist earth?
- Are wire fences attached to buildings properly grounded at fence post nearest building?
- Are ground cables protected from livestock rubbing against them?
- Do radio and television antennas have approved lightning arrestors?

HEATING EQUIPMENT

- Have your stoves, furnace, chimney and smoke pipes been checked and cleaned where necessary within the past year?
- Are furnaces and stoves at least 18 inches from any exposed woodwork?
- Do any stove pipes run through attics or concealed spaces?
- Are smoke pipes, when running through combustible partitions, protected by a double ventilating metal thimble?
- Do you prohibit the use of gasoline or kerosene for starting or quickening fires in your home?
- Does your fireplace have a metal screen in front of it to prevent sparks from flying onto the carpet or furniture?
- Are all portable heaters of a type listed by the Canadian Standards Association?
- Is your portable oil heater always placed on a level floor to ensure proper operation?
- Do you always refill the fuel tanks of portable heaters out of doors and in the daylight?
- If you use a wick-type portable oil heater, do you trim the wick and clean it regularly?
- Do you always turn your portable oil heater out upon retiring at night or when moving it from one part of a building to another?

FLAMMABLE LIQUIDS

- Is your gasoline stored in one of the following ways—underground, or in tanks located at least 50 feet from buildings?
- Are small quantities of gasoline stored in safety cans?
- Are all the tractor or truck motors stopped before refueling?
- Are cars, trucks and tractors kept in buildings separate from barns?

- Is the drycleaning of clothes prohibited on your farm?
- Are oil saturated or paint rags properly disposed of or stored in metal containers?

GENERAL

- Is smoking in the barn prohibited? Are NO SMOKING signs posted?
- Are approved design ash trays provided in buildings?
- Is the hay loft well ventilated?
- Is the behaviour of newly stored hay watched carefully?
- If you use L.P. gas, are the cylinders outside the buildings on a solid foundation and located away from windows and basement doors?
- Do crop dryers have automatic controls to shut off fans and close dampers in case of overheating?
- Do you keep grass or weeds cut short around your home, barn and other buildings?
- Do you ensure that old lumber, trash or manure are not stacked against the barn?
- When burning rubbish or trash, is it always done on a calm day away from buildings or haystacks?

FIRE PROTECTION

- Have you made arrangements with the nearest fire department to assure response to your farm in case of fire?
- Has the fire department surveyed your property to note the location of streams, ponds or fire cisterns?
- In the absence of an organized fire department, have definite arrangements been made with neighbours what to do in case of fire?
- Do you have an adequate emergency water supply (at least 2500 gallons) on your farm?
- Is it accessible to fire trucks or portable pumps?
- Do you have approved type fire extinguishers placed conveniently near locations of special hazard?
- Do you have approved fire extinguishers on motor vehicles?
- Have your fire extinguishers been checked and recharged if necessary within the past year?
- Do members of your family and employees know how to use your fire extinguishers?
- Do you have enough garden hose and an adequate supply of buckets for carrying water?
- Are boxes of sand in buildings to supplement other equipment in fighting oil or gasoline fires?
- Do you have ladders long enough to reach the roof of the highest building?
- Are they located on the side of a building for easy access?

ACKNOWLEDGEMENT

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